

AMENDMENTS TO THE CLAIMS:

1. (Currently Amended) A radiation therapy treatment planning machine for use with a multileaf collimator, said machine comprising:

a Multileaf-Collimator-Position-Calculation-Unit that generates ~~operable to generate~~ multileaf collimator leaf positions as a time series;

a Motion-Speed-Calculating-Unit that calculates ~~operable to calculate~~ leaf motion speed based on the generated time series leaf positions;

a Motion-Speed-Limit-Establishing-Unit that establishes ~~operable to establish~~ a motion speed limit of the leaves; and

a Motion-Display-Unit that indicates ~~operable to indicate~~ leaf motion information and indicates ~~to indicate~~ the motion information of an area where the calculated motion speed exceeds the established motion speed limit.

2. (Currently Amended) The radiation therapy treatment planning machine according to claim 1, wherein said Motion-Speed-Limit-Establishing-Unit comprises a Motion-Speed-Limit-Inputting-Unit that inputs ~~operable to input~~ a motion speed limit of the leaves as the established motion speed limit.

3. (Currently Amended) The radiation therapy treatment planning machine according to claim 2, further comprising:

a Motion-Acceleration-Calculating-Unit that calculates ~~operable to calculate~~ leaf motion acceleration based on the time series leaf positions generated by said Multileaf-Collimator-Position-Calculation-Unit; and

a Motion-Acceleration-Limit-Inputting-Unit that inputs ~~operable to input~~ a motion acceleration limit of the leaves,

wherein said Motion-Display-Unit indicates ~~is further operable to indicate~~ the motion information of an area where the calculated motion acceleration exceeds the inputted acceleration limit.

4. (Currently Amended) The radiation therapy treatment planning machine according to claim 1, wherein said Motion-Speed-Limit-Establishing-Unit comprises a Motion-Speed-Limit-Setting-Unit that sets ~~operable to set~~ a predetermined motion speed limit of the leaves as the established motion speed limit.

5. (Currently Amended) The radiation therapy treatment planning machine according to claim 4, further comprising:

a Motion-Acceleration-Calculating-Unit that calculates ~~operable to calculate~~ leaf motion acceleration based on the time series leaf positions generated by said Multileaf-Collimator-Position-Calculation-Unit; and

a Motion-Acceleration-Limit-Setting-Unit that sets ~~operable to set~~ a predetermined motion acceleration limit of the leaves,

wherein said Motion-Display-Unit indicates ~~is further operable to indicate~~ the motion information of an area where the calculated motion acceleration exceeds the predetermined set acceleration limit.

6. (Currently Amended) The radiation therapy treatment planning machine according to claim 1, further comprising:

a Motion-Acceleration-Calculating-Unit that calculates ~~operable to calculate~~ leaf motion acceleration based on the time series leaf positions generated by said Multileaf-Collimator-Position-Calculation-Unit,

wherein said Motion-Display-Unit indicates ~~is further operable to indicate~~ the motion information of an area where the calculated motion acceleration exceeds a motion acceleration limit.

7. (Currently Amended) A radiation therapy treatment planning machine for use with a multileaf collimator, said machine comprising:

a Multileaf-Collimator-Position-Calculation-Unit that generates ~~operable to generate~~ multileaf collimator leaf positions as a time series;

a Motion-Speed-Calculating-Unit that calculates ~~operable to calculate~~ leaf motion speed based on the generated time series leaf positions;

a Motion-Speed-Limit-Establishing-Unit that establishes ~~operable to establish~~ a motion speed limit of the leaves; and

a Leaf-Position-Correction-Unit that corrects ~~operable to correct~~ the leaf positions of an area, where the calculated motion speed exceeds the established motion speed limit, such that in order for the leaf motion speed is ~~to be~~ equal to or less than the established motion speed limit.

8. (Currently Amended) The radiation therapy treatment planning machine according to claim 7, wherein said Motion-Speed-Limit-Establishing-Unit comprises a Motion-Speed-Limit-Inputting-Unit that inputs ~~operable to input~~ a motion speed limit of the leaves as the established motion speed limit.

9. (Currently Amended) The radiation therapy treatment planning machine according to claim 8, wherein the leaf positions are corrected toward a direction to widen the radiation field shape when said Leaf-Position-Correction-Unit corrects the leaf positions of an area where the calculated motion speed exceeds the inputted motion speed limit such that ~~in order for~~ the leaf motion speed is ~~to be~~ equal to or less than the inputted motion speed limit.

10. (Currently Amended) The radiation therapy treatment planning machine according to claim 9, further comprising:

a Motion-Acceleration-Calculating-Unit that calculates ~~operable to calculate~~ leaf motion acceleration based on the leaf positions corrected by said Leaf-Position-Correction-Unit; and

a Motion-Acceleration-Limit-Inputting-Unit that inputs ~~operable to input~~ a motion acceleration limit of the leaves,

wherein said Leaf-Position-Correction-Unit corrects ~~is further operable to correct~~ the leaf positions of an area, where the calculated motion acceleration exceeds the inputted acceleration limit, such that ~~in order for~~ the leaf motion acceleration is ~~to be~~ equal to or less than the inputted acceleration limit.

11. (Currently Amended) The radiation therapy treatment planning machine according to claim 8, wherein the leaf positions are corrected toward a direction to narrow the radiation field shape when said Leaf-Position-Correction-Unit corrects the leaf positions of an area where the calculated motion speed exceeds the inputted motion speed limit such that ~~in order for~~ the leaf motion speed is ~~to be~~ equal to or less than the inputted motion speed limit.

12. (Currently Amended) The radiation therapy treatment planning machine according to claim 11, further comprising:

a Motion-Acceleration-Calculating-Unit that calculates ~~operable to calculate~~ leaf motion acceleration based on the leaf positions corrected by said Leaf-Position-Correction-Unit; and

a Motion-Acceleration-Limit-Inputting-Unit that inputs ~~operable to input~~ a motion acceleration limit of the leaves,

wherein said Leaf-Position-Correction-Unit corrects ~~is further operable to correct~~ the leaf positions of an area, where the calculated motion acceleration exceeds the inputted acceleration limit, such that ~~in order for~~ the leaf motion acceleration is ~~to be~~ equal to or less than the inputted acceleration limit.

13. (Currently Amended) The radiation therapy treatment planning machine according to claim 8, further comprising:

a Motion-Acceleration-Calculating-Unit that calculates ~~operable to calculate~~ leaf motion acceleration based on the leaf positions corrected by said Leaf-Position-Correction-Unit; and

a Motion-Acceleration-Limit-Inputting-Unit that inputs ~~operable to input~~ a motion acceleration limit of the leaves,

wherein said Leaf-Position-Correction-Unit corrects ~~is further operable to correct~~ the leaf positions of an area, where the calculated motion acceleration exceeds the inputted acceleration limit, such that ~~in order for~~ the leaf motion acceleration is ~~to be~~ equal to or less than the inputted acceleration limit.

14. (Currently Amended) The radiation therapy treatment planning machine according to claim 7, wherein said Motion-Speed-Limit-Establishing-Unit comprises a Motion-Speed-

Limit-Setting-Unit that sets ~~operable to set~~ a predetermined motion speed limit of the leaves as the established motion speed limit.

15. (Currently Amended) The radiation therapy treatment planning machine according to claim 14, wherein the leaf positions are corrected toward a direction to widen the radiation field shape when said Leaf-Position-Correction-Unit corrects the leaf positions of an area where the calculated motion speed exceeds the predetermined set motion speed limit such that ~~in order for~~ the leaf motion speed is ~~to be~~ equal to or less than the predetermined set motion speed limit.

16. (Currently Amended) The radiation therapy treatment planning machine according to claim 15, further comprising:

a Motion-Acceleration-Calculating-Unit that calculates ~~operable to calculate~~ leaf motion acceleration based on the leaf positions corrected by said Leaf-Position-Correction-Unit; and

a Motion-Acceleration-Limit-Setting-Unit that sets ~~operable to set~~ a motion acceleration limit of the leaves,

wherein said Leaf-Position-Correction-Unit corrects ~~is further operable to correct~~ the leaf positions of an area, where the calculated motion acceleration exceeds the predetermined set acceleration limit, such that ~~in order for~~ the leaf motion acceleration is ~~to be~~ equal to or less than the predetermined set acceleration limit.

17. (Currently Amended) The radiation therapy treatment planning machine according to claim 14, wherein the leaf positions are corrected toward a direction to narrow the radiation field shape when said Leaf-Position-Correction-Unit corrects the leaf positions of an area where

the calculated motion speed exceeds the predetermined set motion speed limit such that ~~in order~~ for the leaf motion speed is to be equal to or less than the predetermined set motion speed limit.

18. (Currently Amended) The radiation therapy treatment planning machine according to claim 17, further comprising:

a Motion-Acceleration-Calculating-Unit that calculates ~~operable to calculate~~ leaf motion acceleration based on the leaf positions corrected by said Leaf-Position-Correction-Unit; and

a Motion-Acceleration-Limit-Setting-Unit that sets ~~operable to set~~ a motion acceleration limit of the leaves,

wherein said Leaf-Position-Correction-Unit corrects ~~is further operable to correct~~ the leaf positions of an area, where the calculated motion acceleration exceeds the predetermined set acceleration limit, such that ~~in order for~~ the leaf motion acceleration is to be equal to or less than the predetermined set acceleration limit.

19. (Currently Amended) The radiation therapy treatment planning machine according to claim 14, further comprising:

a Motion-Acceleration-Calculating-Unit that calculates ~~operable to calculate~~ leaf motion acceleration based on the leaf positions corrected by said Leaf-Position-Correction-Unit; and

a Motion-Acceleration-Limit-Setting-Unit that sets ~~operable to set~~ a predetermined motion acceleration limit of the leaves,

wherein said Leaf-Position-Correction-Unit corrects ~~is further operable to correct~~ the leaf positions of an area, where the calculated motion acceleration exceeds the predetermined set acceleration limit, such that ~~in order for~~ the leaf motion acceleration is to be equal to or less than the predetermined set acceleration limit.

20. (Currently Amended) A radiation therapy treatment planning machine for use with a multileaf collimator, said machine comprising:

a Multileaf-Collimator-Position-Calculation-Unit that generates ~~operable to generate~~ multileaf collimator leaf positions as a time series;

a Motion-Acceleration-Calculating-Unit that calculates ~~operable to calculate~~ leaf motion acceleration based on the generated time series leaf positions;

a Motion-Acceleration-Limit-Establishing-Unit that establishes ~~operable to establish~~ a motion acceleration limit of the leaves; and

a Motion-Display-Unit that indicates ~~operable to indicate~~ leaf motion information of an area where the calculated motion acceleration exceeds the established acceleration limit.

21. (Currently Amended) The radiation therapy treatment planning machine according to claim 20, wherein said Motion-Acceleration-Limit-Establishing-Unit comprises a Motion-Acceleration-Limit-Inputting-Unit that inputs ~~operable to input~~ a motion acceleration limit of the leaves as the established motion acceleration limit.

22. (Currently Amended) The radiation therapy treatment planning machine according to claim 20, wherein said Motion-Acceleration-Limit-Establishing-Unit comprises a Motion-Acceleration-Limit-Setting-Unit that sets ~~operable to set~~ a predetermined motion acceleration limit of the leaves as the established motion acceleration limit.

23. (Currently Amended) A radiation therapy treatment planning machine for use with a multileaf collimator, said machine comprising:

a Multileaf-Collimator-Position-Calculation-Unit that generates ~~operable to generate~~ multileaf collimator leaf positions as a time series;

a Motion-Acceleration-Calculating-Unit that calculates ~~operable to calculate~~ leaf motion acceleration based on the generated time series leaf positions;

a Motion-Acceleration-Limit-Establishing-Unit that establishes ~~to establish~~ a motion acceleration limit of the leaves; and

a Leaf-Position-Correction-Unit that corrects ~~operable to correct~~ the leaf positions of an area, where the calculated motion acceleration exceeds the established motion acceleration limit, such that in order for the leaf motion acceleration is ~~to be~~ equal to or less than the established motion acceleration limit.

24. (Currently Amended) The radiation therapy treatment planning machine according to claim 23, wherein said Motion-Acceleration-Limit-Establishing-Unit comprises a Motion-Acceleration-Limit-Inputting-Unit that inputs ~~operable to input~~ a motion acceleration limit of the leaves as the established motion acceleration limit.

25. (Currently Amended) The radiation therapy treatment planning machine according to claim 23, wherein said Motion-Acceleration-Limit-Establishing-Unit comprises a Motion-Acceleration-Limit-Setting-Unit that sets ~~operable to set~~ a predetermined motion acceleration limit of the leaves as the established motion acceleration limit.